

Jeopardy and Background Information
for the Proposed Incidental Taking Authorization
for the State-threatened Buckhorn Mussel (*Tritogonia verrucosa*)
at the STH 108 Bridge over the LaCrosse River, Wisconsin

Background

The Buckhorn mussel (*Tritogonia verrucosa*) is State-threatened in Wisconsin. It occurs in the following Rivers in the state: the Mississippi, Black, Wisconsin, White, St. Croix, Baraboo, Chippewa, Eau Claire, Pecatonica, Wolf, and recently was reported from a single specimen in the LaCrosse River. This species inhabits fairly deep water with mixed mud, sand or gravel, but is also found in riffles in shallow water of mixed substrate. Although present in a number of river systems, it is not usually common.

The life cycle of native freshwater mussels require that the young encyst and metamorphose internally on the gills of an aquatic vertebrate (primarily fish). The fish hosts for the Buckhorn mussel are the brown bullhead, yellow bullhead, and flathead catfish. The presumed purpose for this unique life cycle is to “get mussels upstream.” Movement of fishes are known to distribute mussel species. This has been commonly documented downstream of dams, where fish migration is blocked, and the fish remain for a short period of time. During this time juvenile mussels can drop off the fish host and grow to adulthood.

The location of the STH 108 bridge crossing is downstream from the Neshonoc dam which blocks fish migration upstream. The stream bottom below the dam is bedrock, which transitions into large rock rubble at the bridge crossing, which is followed by a deep hole downstream and shifting sand for the majority of the rest of the river. The La Crosse River does not support a diverse or abundant mussel fauna due to lack of suitable habitat for most species. The presence of the species at this location in the LaCrosse River was unexpected. Presumably, the juvenile mussel was dropped off in the rubble under the bridge by a host fish, encysted while in the Mississippi River, that swam upstream as far as the dam. Although large rock is not preferred substrate for this species, it is possible for the mussel to survive if there is adequate flow and food. No other individuals of the Buckhorn mussel were found and the other mussel species found were few and scattered. It is highly unlikely that there is a reproducing population of Buckhorn mussels at this site, and this location would not be critical to the species on a statewide basis.

Relocation of mussels from bridge projects is a common method to remove mussel populations from harm during bridge construction. This is done to preserve the integrity of the mussel community and is often required when listed species are present. However, it was determined that a relocation effort at this site was not warranted due to the lack of mussel community, lack of habitat, and lack of a reproducing population. The few individuals found to occur at the bridge are the result of upstream transport of mussels from mussel beds downstream, likely from the Mississippi River and it is unlikely that any species, including the single Buckhorn mussel, would be able to establish a mussel population at this location.

The temporary causeway requires the fill of large rock onto the river bottom. Although the causeway will likely result in the loss of mussels where it is placed, once removed, the mix of large and smaller rock from the causeway may provide substrate more suitable for some mussel species. This is not habitat critical to this species, and the project will not result in the destruction or adverse modification of habitat that is critical to the Buckhorn mussel in the state. No other threatened or endangered species known to occur in the LaCrosse River are expected to be impacted by this project as proposed.

Jeopardy Assessment

The proposed causeway and bridge removal will result in instream impacts that are likely to result in the incidental taking of at least one State-threatened Buckhorn mussel. However, the Department has determined that efforts were made to minimize the impacts to this species; the taking is not likely to jeopardize the continued existence or recovery of the state population of the Buckhorn mussel, or the whole plant-animal community of which it is a part; and the action has benefit to the public safety that justifies the action.

Conservation Measures

The extent of the causeway will only be what is necessary for removal of the bridge and piers, any instream impacts and bridge debris will be kept to a minimum. The fill material for the causeway will be removed once the bridge removal is complete, thus restoring the bottom of the river to its previous or an improved condition.